APC® BK500IACH User's Manual

990-2058A Revision 2 8/99

1 Inspect

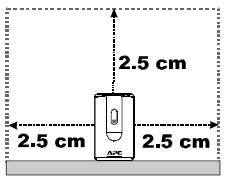
The following items should be inside the box:

- User's Manual
- UPS
- Warranty Registration Form

Notify the carrier if there is damage. Please fill out the Warranty Registration Form to obtain warranty coverage.

2 Place the UPS

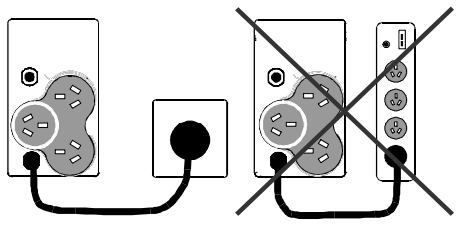
Provide 2.5 cm clearance on top and sides for adequate airflow around unit.



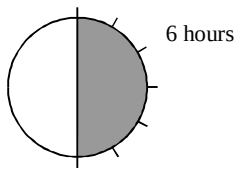
- Avoid direct sunlight.
- Avoid excessive heat.
- Avoid excessive humidity or liquids.
- Avoid excessive dust.

3 Connect UPS to power

Connect the UPS directly to the wall outlet. *Do not power the UPS using a surge suppressor or power strip.*



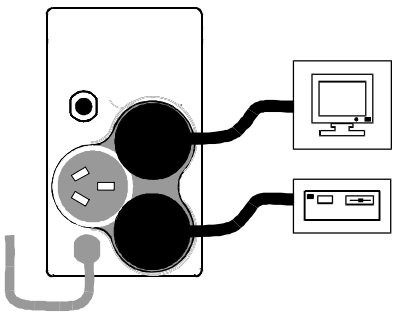
Battery Charging : The UPS battery charges whenever the UPS is connected to utility power. Typically, less than six hours is required to charge the battery fully. Operating runtime is reduced until the battery is fully charged.



4 Connect equipment to UPS

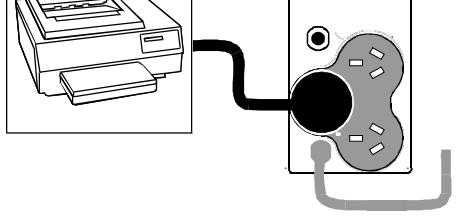
Battery Backup Outlets (2)

Connect computer, monitor, or external drive to these black outlets. These outlets provide battery backup, EMI filtering, line conditioning, and surge protection. Battery power is automatically provided in case of power outage. Power (utility or battery) is not supplied to these outlets when the UPS is switched Off.

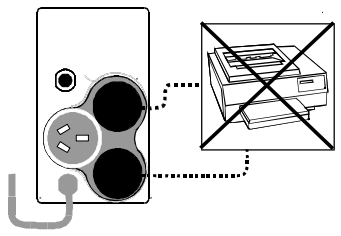


Surge Protection Outlet (1)

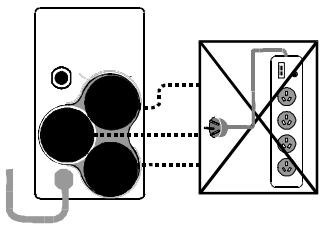
Connect a printer, fax machine, or scanner to this white highlighted outlet. This outlet does not provide power during a power outage. **This outlet is always On (when utility power is available) and is not controlled by the On/Off switch.**



Do not connect a printer to either Battery Backup outlet.

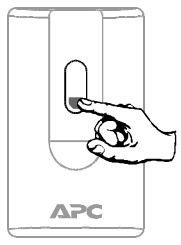


Do not connect a surge suppressor, power strip, or extension cord to the UPS.

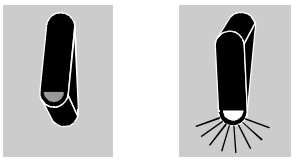


5 Switch On and test the UPS

1. Press the On/Off switch downward to switch the UPS On.



The switch will light up when it is in the On position and utility power is available.



Off On

2. Switch On connected equipment.
3. Test the UPS by disconnecting the UPS power plug from the wall outlet. The UPS should beep and power connected equipment without any interruption.

Audible Indicators

The table below lists sounds generated by the UPS which can be used to determine the UPS status. The status of the switch light (On or Off), in addition to the generated sound, can be used to more specifically indicate a condition. Additional information can be found in the Troubleshooting section on the next page.

Audible Indicator	Switch Light	Description	Solution
Single beep	On	A brief power loss has occurred.	No action is necessary. UPS is performing properly.
One beep every 5 seconds	On	Utility voltage is outside acceptable limits.	UPS is operating properly but you should promptly perform the Computer Shutdown procedure.
	Off	UPS has shutdown to protect the battery.	Leave the UPS plugged in to enable it to recharge the battery when utility power returns.
Continuous Tone	On	Battery capacity is low and remaining run time is short.	**Immediately** perform the Computer Shutdown procedure.
	On	Connected equipment is drawing too much power from the UPS.	**If utility power is powering devices** - Disconnect one (or more) connected devices from the UPS - until the tone is not sounded. Then switch the UPS Off and then On.
	Off	Power demand exceeded the UPS capacity so much that the UPS had to shutdown.	**If the UPS battery is powering devices** - Disconnect one (or more) connected devices from the UPS - until the tone is not sounded.

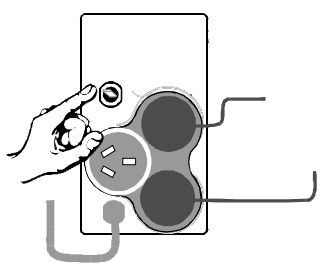
Computer Shutdown

When the UPS is operating On Battery the procedure below can be performed to conserve battery charge:

1. Save important working files.
2. Exit all applications.
3. Exit the operating system.
4. Switch the UPS Off.

Circuit Breaker

If an overload is severe, the circuit breaker may trip (the resettable center plunger of the circuit breaker pops out).



If the circuit breaker trips:

1. Disconnect nonessential load equipment from the UPS to eliminate the overload.
2. Press the breaker plunger back "in" to restart the UPS.

Specifications

Expected Runtime for a Typical PC (110W)	19 minutes (For more accurate runtime information consult http://www..apcc.com/sizing)
Acceptable Input Voltage	0 - 320 V AC, Single Phase
Nominal Input Voltage	220 - 240 VAC
Nominal Input Frequency	50 Hz
Transfer Voltage	165
Transfer Time	12 ms (maximum)
Maximum Load	500VA, 300W
On Battery Output Voltage	230 VAC ± 8%
On Battery Frequency	50 Hz - unless synchronized to utility during deep brownout
On Battery Waveshape	Stepped approximation of a sine-wave
Output Over Current Protection	Overcurrent and short-circuit protected, latching shutdown on overload
Typical Battery Life	3 to 6 years, depending on number of discharge cycles and ambient temperature
Operating Temperature	0 to 40° C
Storage Temperature	-15 to 45° C
Operating and Storage Relative Humidity	0 to 95%, non-condensing
UPS Size (H x W x D)	15.0 x 8.9 x 35.6 cm
UPS Weight	7.0 kg
Shipping Weight	8.2 kg

APC

www.apcc.com

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Troubleshooting

Use the table below to solve minor UPS installation problems. Consult the APC web site or contact APC Technical Support Staff for assistance with complex UPS problems.

Symptom	Possible Cause	Solution
UPS will not switch On.	UPS circuit breaker has tripped.	Reduce the power demand on the UPS by unplugging equipment and then reset the circuit breaker by pressing the plunger back in.
	UPS is not connected to utility power.	Check that the UPS power plug is securely connected to the wall outlet.
UPS operates On Battery even though normal line voltage is thought to exist.	UPS circuit breaker is tripped.	Reduce the power demand on the UPS by unplugging equipment from the UPS and then reset the circuit breaker by pushing the plunger back in.
Single beep.	Normal UPS operation.	This is not a fault. The UPS is indicating that it is protecting the load during a momentary power loss.
UPS does not provide expected back up time.	The UPS is excessively loaded.	Unplug non-essential Battery Backup connected equipment (such as printers) or plug it into the Surge Protection outlet.
	The UPS's battery is weak due to recent power outage and has not had time to recharge.	Charge the battery for 6 hours. The battery charges whenever the UPS is connected to utility power.
	Battery requires replacement.	Replace battery (see Order Replacement Battery). Batteries typically last 3-6 years, shorter if subjected to frequent power outages or elevated temperatures.
PC and/or Monitor is not powered during an outage.	PC and/or monitor is plugged into the Surge Protection outlet.	Move PC and/or monitor to a Battery Backup outlet.

Service

Note: If the UPS requires service, do not return it to the dealer! Please follow the steps described below.

1. Consult the Troubleshooting section to eliminate common problems.
2. Determine if the circuit breaker is tripped. If the circuit breaker is tripped, reset the breaker and determine if the problem still exists.
3. If the problem persists, consult the APC Worldwide Web site (www.apcc.com) or call customer service.
   - Record the model number of the UPS, the serial number, and the date purchased. Be prepared to troubleshoot the problem over the telephone with a technician. If this is not successful, the technician will issue a Return Merchandise Authorization Number (RMA#) and a shipping address.
   - If the UPS is under warranty, repairs are free. If not, there is a repair charge.
4. Pack the UPS in its original packaging. If the original packing is not available, ask customer service about obtaining a new set. Pack the UPS properly to avoid damage in transit.

   Note: Never use Styrofoam™ beads for packaging. Damage sustained in transit is not covered under warranty (insuring the package for full value is recommended).
5. Write the RMA# on the outside of the package.
6. Return the UPS by insured, prepaid carrier to the address **given to you by customer service**.

Warranty

The standard warranty is 2 years from date of purchase. APC's standard procedure is to replace the original unit with a factory reconditioned unit. APC will ship out the replacement unit once the defective unit has been received by the repair department or cross ship upon the receipt of a valid credit card number. The customer pays for the shipping to APC and APC pays ground freight transportation costs back to the customer.

Customers who must have the original unit back due to assigned asset tags and set depreciation schedules must declare such a need at first contact with APC Customer Service.

Order Replacement Battery

The BK500IACH replacement battery cartridge (RBC) part # is **RBC 2.** Replacements can be ordered from local retailers, APC, or the APC web site (http://www.apcc.com).

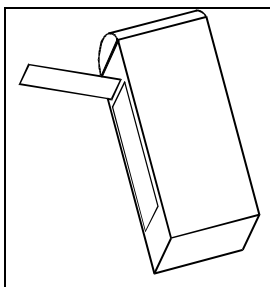
Battery Replacement

This procedure requires a coin or screwdriver.

Battery replacement is a safe procedure, isolated from electrical hazards. The replacement battery must match the specifications of RBC 2. You may leave the UPS connected to utility power and your equipment connected and "On" during this procedure. *Do not replace the battery when the UPS is On Battery (beeping).*

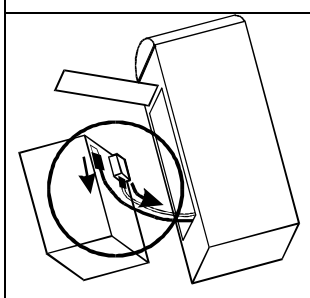
Note: Once the battery is disconnected, the connected equipment is not protected from power outages.

- Do not dispose of batteries in a fire. The batteries may explode.
- Do not open or mutilate batteries. They contain an electrolyte which is toxic and harmful to the skin and eyes.
- To avoid personal injury due to energy hazard, remove wrist watches and jewelry such as rings when replacing the batteries. Use tools with insulated handles.

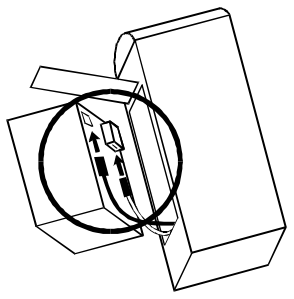


1. Lay the UPS on its left side to permit access to the battery access door on the bottom of the UPS. Remove the two screws that secure the battery door and open the door.

   Note: It may be necessary to pull the battery door slightly outward or toward the front of the unit in order to open the door fully.
2. Grasp the white tab attached to the battery and gently pull the battery out.



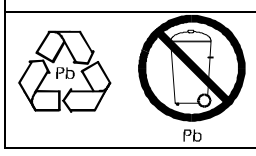
3. Disconnect the two wires connecting the battery to the UPS. Loosen the wires by wiggling them while pulling straight back from the battery connector.



4. Connect the new battery in place of the old.

   Red wire - to red terminal
   Black wire - to black terminal

   Note: Small sparks at the battery connections are normal during connection.
5. Insert the new battery in the UPS. Carefully avoid pinching the wires.
6. Close the battery compartment door and replace the screws.



7. **Batteries must be recycled.** Deliver the old battery to an appropriate recycling facility or ship it to APC in the new battery's packing material. See the new battery instructions for more information.

UPS Storage

Before storing, the UPS should be connected to utility power for at least 4-5 hours. Disconnect the UPS from utility power, cover and store the UPS upright in a cool, dry location. During long time storage, the battery should be charged according to the schedule below:

Storage Temperature	Recharge Frequency	Charging Duration
5 to 86°F (-15 to 30 °C)	Every 6 Months	10 Hours
86 to 113°F (30 to 45° C)	Every 3 Months	10 Hours

APC Contact Information

China Office	Telephone #	Fax #
Sales/Technical Support	86 10 8529 9888	86 10 8529 9158
APC Web Site	http://www.apcc.com	
Web Technical Support	http://support.apcc.com	